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# ESTABLISHING WORD-CLASS DISTINCTIONS IN THE VOCABULARY OF ADULT LANGUAGE LEARNERS - A CROSS-LINGUISTIC PERSPECTIVE

## 1. Introduction

1)

The present paper deals with the ways in which poorly-educated adult language learners spontaneously acquire and establish a vocabulary in a second language. It draws on a longitudinal European Science Foundation Project (the ESF-project) on adult language acquisition currently being carried out in parallel in five European countries. The project aims to make a cross-linguistic, comparative analysis of factors influential in the structure/order and speed/success of second language (L 2) acquisition by adults with different first language (L 1) backgrounds (see Perdue 1984 for a detailed description). The project comprises five target languages and six source languages. In each of the five target countries, two source languages are covered in the following way:

Table 1

L 2	English	German	Dutch	French	Swedish	
L 1	Punjabi	Italian	Turkish	Arabic	Spanish	Finnish

### 1.1. Defining words and word-class distinctions

With respect to language acquisition, whether first or second, vocabulary goes on being treated as the Cinderella of applied linguistics (Lord 1974, see also Hatch 1983, Meara 1980 and 1984, Broeder & al. 1986). According to Meara (1980) most work has concentrated on vocabulary teaching rather than on vocabulary learning. This is remarkable, at least if one realizes that the size and variety of the learner's word-stock together with his ability to handle it as efficiently as possible determines, to a high degree, his basic communicative potential. Second language learners usually prefer carrying around dictionaries to having a grammar book with them, as pointed out by Krashen (cited in Hatch 1983, 74).

Words have long been intensively described and cut into pieces from different perspectives and by various disciplines (see Takala 1984 for an overview). The intriguing question is how words can be characterized and how words can be categorized into different word-classes on the basis of this characterization. Of course, the way in which word-class distinctions are established affects the description and analysis of the vocabulary acquisition process.

Maratsos (1982, 240) argues that semantically or cognitively based descriptions of the L 1 acquisition process have provided useful insights. These studies have, however, tended to assign a semantic core to what, in the adults' grammar, are formal

grammatical word-class distinctions; for instance, it is claimed that the class of content words that comprises nouns, verbs, and adjectives, basically denotes concrete objects, actions and states/qualifications, respectively.

According to Maratsos (1982), at a certain stage in the L1 acquisition process, word-class distinctions are necessarily formed and shaped by sets of grammatical operations (co-predictors) rather than by semantic denotations. Drawing on an analysis of German gender distinctions Maratsos (1982) supplies further evidence of this claim.

A number of studies on the (mental) lexicon provide evidence that in addition to semantic features grammatical word-class features are also included in the major organizational categories that determine the selection and retrieval of word-forms. (Hatch 1983, 63). It is a well-known fact from speech error data that repairs, corrections, etc. are more often within than between word-classes (Maratsos 1982, 255 and Hatch 1983, 63).

Another source of information on grammatical word-class formation is provided by studies of impaired language. For instance, in certain types of aphasia, it is reported that the distortion in patients tend to affect specific grammatical word-classes (Bisazza 1980).

In the present study, we shall have a closer look at grammatical word-classes, especially at the developmental aspects of these features in the lexicon of adult language learners of Dutch (with Turkish and Arabic as L1) and of Swedish (with Finnish and Spanish as L1). More specifically, we deal with two contrasts which are based on grammatical word characteristics:

- (1) function words versus content words
- (2) verbs versus nouns

Sections 1.2. and 1.3. are a theoretical account of these contrasts in language acquisition. Sections 2. and 3. are an analysis of data derived from adult L2 acquisition processes, followed by a discussion of results and conclusions in section 4.

## 1.2. Function words versus content words

Traditionally, a distinction is made between content words - nouns, verbs, and adjectives - and function words (including articles, pronouns, prepositions, conjunctions, and quantifiers). Interjections are assigned to a separate word-class. In deciding the number of categories and the method of categorization, arbitrariness cannot be avoided. (Crystal 1967, 43). However, there seems to be general agreement as to the basic distinctions to be made (See e.g. Beheydt 1983, 150, Garret 1980, and Bolinger 1968, 63).

The grammatical distinction between content and function words corresponds fairly well to that between open and closed class words (Clark & Clark 1977, 21-22). Content words constitute an open class with many members, and this category contains the most important meaning carriers of an utterance. The category of function words, on the other hand, is a closed class; the most important function of this class is that the words glue the content words together. Although function words are limited in number they are very frequent.

From the language learner's point of view, his analytical

that certain characteristics of the input will affect the identification of the members in the class of content words or function words.

Many studies on language development in children provide evidence that closed class words are learnt later than open class words (Carey 1978, 380). Gleitman and Wanner (1982, 23) confirm this result in concluding that closed-class words which are phonologically short, and stressless forms appear at later stages of acquisition in the presence of increasing fluency. Another argument as to why content words predominate in the beginning of language learning is related to the communicative needs of language learners. Leaving out function words does not necessarily affect comprehension of an utterance. In language production speakers primarily employ function words for fluency and efficiency in communication.

### 1.3. Verbs versus nouns

Bisazza's (1980) study especially treats the processing ease nouns vs. other grammatical categories. It deals with 3 areas of research, viz. (a) experimental approaches (e.g. visual word recognition), (b) language acquisition and (c) linguistic breakdown due to brain damage. After a thorough and lucid overview, Bisazza concludes that with regard to these 3 areas, and for a variety of languages, similar noun facilitation phenomena have been found, compared with other word-classes.

Often a basic dichotomy is made between object reference (nouns) and predication (verbs, and adjectives).

Gentner (1982) tested the hypothesis that nouns are learnt before verbs in data derived from children acquiring such unrelated languages as English, Turkish, or Kaluli as their first language. She found the hypothesis to be corroborated by the data.

Gentner (1982) maintains that nouns are learnt earlier because their referents are more accessible than those of predicates. Her conjecture is that this is so for perceptual reasons; objects labelled by nouns are more salient, more stable, and more cohesive than those labelled by predicate terms. Moreover, there might be cognitive reasons, e.g. constancy of the concepts of objects, for why nouns predominate in the speech of young children.

Maratsos & Chalkley (1980) and Maratsos (1982) claim that it is debatable whether the concepts of "noun" and "verb" have an important semantic core. They retain to the idea that grammatical categorical operations attached to nouns and verbs define the distinction between them (see section 1.1 above). Language learners proceed inductively; in a piecemeal manner and in different syntactic contexts, they discover, for example, how noun and article co-predict one another. Thus, in acquiring a language, one learns how to exploit grammatical co-predicting correlations, for instance, "takes plural -s predicts noun status for a stress-bearing word".

However, there are some problems connected with Maratsos' claim. Further empirical and analytical studies are needed to unravel the problem of formal word-class formations in language development (Maratsos 1982).

#### 1.4. Claims about order in the language acquisition process

In light of the considerations above, 2 claims can be made about grammatical word-class distinctions in first language acquisition processes:

Claim (1) Content words are learned before function words

Claim (2) Nouns are learned before verbs

These claims indicate the quintessential question raised by the present study: do the claims still hold when adults acquire a second language spontaneously over time?

## 2. Operationalisation

### 2.1. Informants

Our analysis is based on the lexical development of 6 adult L 2 learners who participated in the ESF-project described in section 1. More precisely, the sample in our study is composed of the following learners:

Table 2

	Dutch		Swedish	
L 2				
L 1	Turkish	Arabic	Finnish	Spanish
Learner	Mahmut (TD1) Osman (TD2)	Mohammed (AD1)	Leo (FS1) Mari (FS2)	Nora (SS1)

At the time of joining the project they had been in the target country for less than one year and had (very) limited target language proficiency. The average age of the learners was 20 years, except for Nora who was 42 years of age. There are 2 women (Mari and Nora) and 4 men in the sample. Extensive socio-biographical profiles of these learners of Dutch and Swedish are given in Broeder & al. (1985) and in an ESF Project Progress Report of the Swedish team (1984) respectively.

### 2.2. Data elicitation

Over a period of 2 to 3 years each learner participated 3 times in one specific audio recorded data collection activity. In this paper, we consider data from an activity where the learner was shown a video-clip. The learners of Dutch saw fixed parts from one and the same Harold Lloyd silent film, and the learners of Swedish saw fixed parts from a Charlie Chaplin silent film. Afterwards the learner was asked to retell/comment on the content of the video-clip to a native TL-speaker who had not seen the video-clip before.

Table 3 specifies, for each learner, how many months from the date of arrival in the target country had passed to the respective recording.

Table 3

		Arrival date	Time 1	Time 2	Time 3
Mahmut	(TD1)	12-81	15	24	33
Osman	(TD2)	09-81	18	27	36
Mohamed	(AD1)	02-82	13	22	31
Leo	(FS1)	06-82	14	20	23
Mari	(FS2)	09-82	19	25	30
Nora	(SS1)	07-81	24	33	45

### 2.3. Preparing data for analysis

A detailed and annotated computer transcript of each recording of an activity was made. For the lexical analysis the procedural steps were then followed as spelled out in great detail from a cross-linguistic perspective by Broeder & Voionmaa (1985). Our procedure for lemmatization can be summarized as follows:

A. From the computer transcripts a raw concordance list is produced with the help of computer programs (e.g. OCP). The concordance list gives, alphabetically, the word-forms used by the learner together with the verbal context (concordance) and the word-form frequency.

B. The word-form supply is "cleaned up" to get a streamlined list of word-tokens: (1) false starts are excluded; (2) word-repeats are included; (3) separable parts of compound verbs are defined as separate word-types.

C. The list of word-tokens is converted into an ordered list of coded word-types: different classes of identical word-tokens. The word-type coding involves first assigning to each word-type the correct word-class code in the context, according to target language conventions. The following distinctions are made: nouns, verbs, adjectives, articles, pronouns, prepositions, conjunctions, quantifiers, adverbs, interjections, and formulas. (Particles are optionally coded as a separate class).

In cases of ambivalent word-classes, such as 'work' as a noun or as a verb, more than one code can be given. Moreover the hypothetical learner meaning can be noted if the learner's use of a word-form deviates from its standard meaning in the TL.

The word-type coding also implies that each word-type is connected with a lemma. The lemma is defined in principle as the dictionary entry, while bearing in mind the following rules:

- (1) conjugated verbs are converted into infinitives;
- (2) diminutives are converted into their basic forms;
- (3) plurals of nominals are converted into their basic forms;
- (4) ordinals are converted into cardinals;
- (5) petrified forms are not converted, e.g. Dutch: *beetje*, *meisje*, *meer*.

D. Finally, the word-type frequency, i.e. the number of word-tokens that are coded and lemmatized in exactly the same way, is given. The new supply of word-types is composed of records consisting at least of 6 fields. A record can be exemplified as follows:

1	1	1	2	1	3	1	4	1	5	1	6	1	7	1
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

The record format can be used as input for the data analysis with available statistical packaging and sorting facilities.

Often studies on size and variety of the language learners' lexicon do not make sufficiently explicit what the basic units in the analysis are, and it is not always clear what the given figures denote. In the present study, the lemma and word-tokens are the basic terms; they have been operationalized as indicated above. The main reason we have opted for the lemma pertains to the cross-linguistic reliability of the word-class ratios. After having compared each other's files lemmatized in accordance with the procedure of lemmatization (Broeder & Voionmaa 1985), we concluded that ratios based on lemmas are more reliable and imply less inter-researcher variance and fewer interpretative differences than ratios based on word-types. (See Beheydt 1983, 209 for some arguments for and against using the dictionary entry as the lemmatization norm).

Another reason we have chosen to use lemma based ratios of the word classes is to deal, to some extent, with the disturbing factor of time/text length mentioned above. See Beheydt (1983) and Broeder (1986) for a discussion of the reliability of several ratios with a view to factors such as time length, topic variation, basic count units, etc.

### 3. Results and conclusions

The database of the present study consists of 7722 word-tokens. Table 4 specifies the contribution to this database for each informant per film retelling/commenting session (=time).

Table 4

Target language	1	Dutch				1	Swedish				1		
Source language	1	Turkish		1	Arabic	1	Finnish		1	Spanish	1		
Language learner	1	MAHM/TD 1	1	OSM/TD 2	1	MOHA/AD 1	1	LED/FS 1	1	MARI/FS 2	1	NORA/SS 1	
Time 1	lemma	1	58	1	70	1	91	1	76	1	70	1	91
	token	1	243	1	246	1	448	1	183	1	376	1	326
	l/t ratio	1	.239	1	.285	1	.203	1	.415	1	.186	1	.279
		1		1		1		1		1		1	
Time 2	lemma	1	61	1	77	1	92	1	135	1	81	1	147
	token	1	208	1	226	1	380	1	539	1	518	1	677
	l/t ratio	1	.293	1	.341	1	.242	1	.251	1	.156	1	.217
		1		1		1		1		1		1	
Time 3	lemma	1	83	1	95	1	89	1	162	1	91	1	203
	token	1	314	1	295	1	245	1	680	1	847	1	971
	l/t ratio	1	.243	1	.322	1	.363	1	.238	1	.107	1	.209
		1		1		1		1		1		1	

With the exception of AD1, all learners were found to have



than at times 1 and 3, whereas the Arabic learner of Dutch (AD1) produced a decreasing number of word-tokens over time. With respect to the proportion between lemmas and word-tokens, the lemma/token ratio, it can be observed that the learners of Swedish had proportionately fewer lemmas, the Arabic learner had an increasing lemma/token ratio and the Turkish learners had a higher lemma/token ratio, at time 2 than at times 1 and 3. It is worth mentioning that the growing number of word-tokens over time for most learners might be attributable to the length of time it took to carry out an activity at an earlier time than later on, which provided more time for the learner to use more word-tokens. The same goes for the observed difference in number of word-tokens between the learners.

FIGURE 1

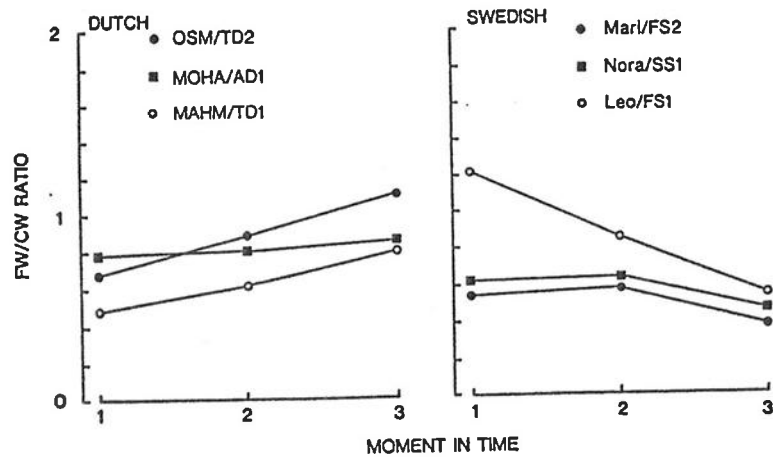
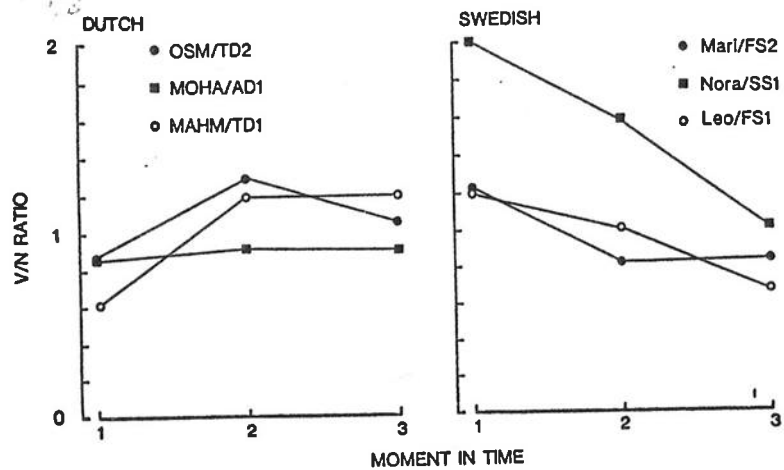


FIGURE 2



### 3.1. Function words versus content words

The total subset of function words (FW) for 6 learners taken together consisted of 4580 word-tokens. The subset of content words (CW) consisted of 3713 word-tokens. In figure 1 the lemma based FW/CW ratio is rendered per learner and per moment in time.

(Insert figure 1 here)

With two exceptions (TD2 at time 3 and FS1 at time 1) there were at each time for each of these learners fewer FW lemmas than CW lemmas (ratio less than 1). In figure 1 it can be seen that the learners of Dutch developed proportionately more FW lemmas than CW lemmas over time. The apparent stability of AD1 has to be related to the decreasing number of word-tokens (see table 4). Moreover, in this learner, both within the CW and the FW the lemma/token ratio was found to increase.

The developmental pattern in the learners of Swedish (FS1, FS2 and SS1), however, was the reverse, i.e. proportionately fewer FW lemmas than CW lemmas. FS2 and SS1 seem to remain stable from time 1 to time 2, but taking into account the absolute number of word-tokens, a proportionate decrease of FW lemmas in relation to CW lemmas also holds for these two learners.

Relating these results to the claim that function words are learnt before content words in L1 development (section 1.4) leads to the following conclusions:

- (1) Adult L2 learners of Dutch and Swedish have fewer different FW-lemmas than CW-lemmas in the early stages.
- (2) The adult learners of Dutch are found to have a proportionately greater growth of different FW lemmas than different CW lemmas over time, whereas the reverse is found to hold true for the learners of Swedish.

### 3.2. Verbs versus nouns

As a whole, the V-N database of the 6 learners is found to be composed of 1874 V-word-tokens and 1570 N-word-tokens. In figure 2 the lemma based V/N ratio is rendered per informant and per moment in time.

(Insert figure 2 here)

All 3 learners of Dutch are found to have proportionately more N-lemmas than V-lemmas at time 1. At time 2, for TD1 and TD2 V-lemmas dominate. At time 3, these two learners are found to develop a slight difference in their patterns; in TD1 the pattern is balanced on the level where V-lemmas dominate, whereas TD2 has the same proportion of N-lemmas as V-lemmas at time 3. The Arabic learner of Dutch, AD1, appears to have a unique developmental pattern where no changes are found to occur in the V/N lemma ratio over time.

If we go on to examine the number of word-tokens in the respective activities, we find that the high lemma based V/N ratio of TD2 at time 2 is related to a descending N-lemma/token ratio and an increasing V-lemma/token ratio. The stability of the V/N

mains approximately the same while the number of word-tokens decreases to half. This is not matched by a corresponding drop in the number of word-tokens for the V-lemmas.

The learners of Swedish have a different developmental pattern from the learners of Dutch in that (a) at time 1, they have proportionately more V-lemmas than N-lemmas, and that (b) they later develop proportionately more N-lemmas than V-lemmas. Observe that FS1 has a V/N-ratio of 1 at time 2, while FS2 produces more N-lemmas than V-lemmas at time 2. The ratio for FS1 then develops further, to the benefit of N-lemmas, whereas in FS2 the developmental pattern remains stable. In the development of the Latin American learner of Swedish, SS1, the lemma based V/N ratio decreases from a remarkably high value at time 1. At time 3, she has proportionately as many N-lemmas as V-lemmas.

Relating these results to the V-N claim (2) made about L 1 development in section 1.4. above, leads us to the following conclusions:

- (1) In early stages of the L 2 acquisition process of adult learners of Dutch, N-lemmas dominate, while for adult L 2 learners of Swedish, V-lemmas dominate in the beginning.
- (2) For the L 2 learners of Dutch, the growth within the class of V-lemmas is proportionately greater than within the class of N-lemmas, while for the learners of Swedish there was a proportionately greater growth of N-lemmas over time.

The conclusions made in this section and in section 1.3 should, however, be seen with some caution. With respect to the developmental patterns of the FW-CW and V-N distinctions it should be borne in mind that the picture might be unclear due to (a) the fact that some categories (e.g. CW and V) have more morphological potential than others which the learners acquire over time. Perhaps there are also differences between Swedish and Dutch in this respect. Moreover, learner specific preferences might emerge: some learners continue learning new words while other learners prefer to try out the morphological possibilities of words; (b) the fact that there was a difference in length (total number of word-tokens) between activities. In further analysis this factor has to be taken into account by means of well developed statistical measures (see ESF team Tilburg 1985 for some suggestions).

#### 4. Discussion

Studies on L 1 development provide abundant evidence that nouns really are learned before verbs and content words are learned before function words. And, although it is less clear, the same conclusion seems to hold true in the L 2 acquisition process for children (see among others: Yoshida 1978, Rescorla & Okuda 1982 and Van Helvert 1985).

With respect to the L 2 acquisition of adults one could argue that such learners at least have a general awareness that in any target language there is a distinction between words which have mainly a 'grammatical' component (the function words) and words with a more 'semantic core' (the content words). To what extent L 2 learners have more specified expectations about other formal word-class distinctions remains an open question (see Klein 1986, 80-90 for a clear account of the (non)-relevance of marking grammatical word-class distinctions in learner varieties).

As stated by others (Dietrich 1985 and Kotsinas 1983, see also Kotsinas 1985) it seems reasonable that all word-classes occur from the very beginning in adult second language acquisition processes. However there will be cross-linguistic differences between learners with different L 1 backgrounds.

Studies carried out by Broeder & al. (1986), Dietrich (1985) and Kotsinas (1983 and 1985) are relevant in this respect.

Broeder & al. (1986) analysed the early lexicon of the same Turkish learner (MAHM/TD1) and the same Arabic learner (MOHA/AD1) of Dutch as in the present study. Their study was based on the first 9 months of lexical development, and a far greater database (appr. 25 000 wordtokens) was analysed. Moreover, an abstraction was made across different activities (e.g. film retelling, dialogue in playscenes, conversations etc.). Broeder & al. point out that poor language proficiency in Dutch implied a large proportion of content words and nouns, and that closed class words and verbs appeared relatively late.

Dietrich (1985) reports 2 analyses which confirm the developmental pattern of the verb/noun distinction found in our analysis for the learners of Dutch. The first of these analyses concerned Turkish and Italian adult learners of German who fulfilled the same task (retelling exactly the same Harold Lloyd video clip) as our learners of Dutch. In the second analysis Italian and Spanish immigrant workers took part.

Kotsinas (1983, 1985) analysed the vocabulary of 6 adult immigrant learners of Swedish (5 Greeks and 1 Pole, between 26-49 years of age and all had lived for more than 3 years in Sweden). The distribution of the word-types (not the lemmas as in the present study) showed that nouns constituted the largest word-class category. Moreover, there were initially many CW-types and FW-types present.

The lexical patterns in the adult learners of Swedish in the studies by Kotsinas (1983, 1985) were found to differ from the patterns in the present study. It should be noted that there are important differences between these studies as to informants dealt with, activity concerned (conversation vs. film retelling) and basic lexical unit employed (word-type vs. lemma). With regard to the verb/noun and the function word/content word development it is left to be studied further, whether the pre-dominance of some word-classes is language specific, learner specific or universal characteristics of adult second language acquisition processes.

We anticipate that the early appearance of some word-classes will probably come up in a totally different kind of analysis, viz. of the conversation strategies adult L 2 learners opt for in interactions with native speakers of the target language. It is our conjecture that the 'keyword strategy' (Voionmaa 1983, Allwood & Abelar 1984) is pertinent in this connection; this strategy implies that the learner focuses his attention on those words that are important for him in producing or comprehending the TL with respect to various kinds of expectations. According to Perdue (1985) these important words are mainly open class words. The results in our study suggest that adult learners of Swedish more often prefer verbs than nouns as keywords while the reverse holds true for the learners of Dutch.

It might also be the case that content words and nouns (or verbs) dominate only in the very early stages of the adult L 2 acquisition process. Perhaps, later on, some learners turn out

true for 'noun lovers' and 'verb lovers', or 'noun leavers' as Horgan (1980) called the latter group in studies on L1 development.

Further evidence is necessary to gain greater insight into the pertinent developmental aspects of the adult learners' lexicon. With respect to the relevance of grammatical word-class distinctions, analyses should cover more data from more learners with different language proficiency in different language use situations. Also various target and source languages and language pairs have to be taken into account. Moreover, proceeding studies on vocabulary acquisition processes in adult learners there is a great number of other respects to be considered such as the structure and the frequency of words-classes, word-combinations, word-order, and morphological variation within word-classes etc.

#### Footnote

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#### References

- Allwood, J. & Abelar, Y. 1984 Lack of Understanding, Misunderstanding, and Adult Language Acquisition. In Extra, G. & Mittner, M. (eds.) 1985: Studies in Second Language Acquisition by Adult Immigrants. Tilburg University: Tilburg, pp.27-55.
- Beheydt, L. 1983. Kindertaalonderzoek. Cabay: Louvain-La-Neuve.
- Bisazza, J. 1980. The Processing Complexity of Nouns and Verbs. (doctoral dissertation, University of Hawaii).
- Bolinger, D. 1968. Aspects of language. Harcourt: New York.
- Broeder, P., Coenen, J., Extra, G., Van Hout, R., Zerrouk, R. 1985. Spatial Reference in L2 Dutch of Turkish and Moroccan Adult Learners: the Initial Stages. In Extra, G. & Vallen, T. (eds.) 1985: Ethnic Minorities and Dutch as a Second Language. Foris: Dordrecht, pp. 209-252.
- Broeder, P., Coenen, J., Extra, G., Van Hout, R., Zerrouk, R. 1986. Ontwikkelingen in het Nederlandstalige Lexicon bij Anderstalige Volwassenen: een Macro en Micro-perspectief. In Creten, J., Geerts, G., Jaspaert, K. (eds.) 1986: Werk-in-uitvoering. Momentopname van de Sociolinguïstiek in België en Nederland. ACCO: Leuven, pp.39-57.
- Broeder, P. & Voionmaa, K. 1985. Procedure for Lemmatisation. Tilburg/Göteborg (unpublished).
- Carey, S. 1982. Semantic Development: the State of the Art. In Wanner, E. & Gleitman, L. (eds.) 1982: Language Acquisition. The state of the Art. Cambridge University Press: Cambridge, pp. 347-398.
- Clark, E. & Clark, H. 1977. Psychology and Language. Harcourt: New York.
- Crystal, D. 1967. Word-classes in English Lingua 17, 24-56.
- Dietrich, R. 1985. Nouns and Verbs in the Learners' Lexicon. Heidelberg (unpublished).

- ESF Annual Progress Report of the Swedish Team 1984. Göteborg (unpublished).
- ESF team Tilburg 1985. Quantitative measures for lexical analysis. Tilburg (unpublished).
- Gentner, D. 1982. Why Nouns are learned before Verbs: Linguistic Relativity versus Natural Partitioning. In Kuczaj, S. (ed.) 1982: Language Development: Language Cognition and Culture, Hillsdale, N.J., pp. 301-334.
- Gleitman, L. & Wanner, E. 1982. Language Acquisition: the state of the Art of the State of the Art. In Wanner, E. & Gleitman, L. (eds.) 1982: Language Acquisition. The state of the Art. Cambridge University Press: Cambridge, pp. 3-48.
- Hatch, E. 1983. Psycholinguistics. A Second Language Perspective. Newbury House: Rowley, Massachusetts.
- Horgan, D. 1980. Nouns: love'em or leave'em. In Teller, V. & White, S. (eds.) 1980: Studies in Child Language and Multilingualism, Annals of the New York Academy of Sciences 345, 1980, 5-25: New York.
- Klein, W. 1986. Second Language Acquisition. Cambridge University Press: Cambridge.
- Kotsinas, U. 1983. On the Acquisition of Vocabulary in Immigrant Swedish. In Ringbom, H. (ed.) 1983: Psycholinguistics and Foreign Language Learning, Åbo Akademi. Åbo, pp. 75-100.
- Kotsinas, U. 1985. Invandrare talar svenska. Liber. Malmö.
- Lord, R. 1974. Learning Vocabulary. IRAL 12, 3, 239-247.
- Maratsos, M. & Chalkley, M. 1980. The Internal Language of Children's Syntactic Categories. In Nelson, K. (ed.) 1980: Children's Language, Gardner Press: New York.
- Maratsos, M. 1982. The Child's Construction of Grammatical Categories. In Wanner, E. & Gleitman, L. (eds.) 1982: Language Acquisition. The state of the Art. Cambridge University Press: Cambridge, pp. 240-266.
- Meara, P. 1980. Vocabulary Acquisition: a Neglected Aspect of Language Learning. Language Teaching and Linguistics Abstracts 13, 221-246.
- Meara, P. 1984. The Study of Lexis in Interlanguage. In Davies, A., Criter, C., Howatt, A. (eds.) 1984: Interlanguage. Edinburgh University Press: Edinburgh, pp. 225-235.
- Perdue, C. (ed.) 1984. Second Language Acquisition by Adult Immigrants. A Field Manual. Newbury House: Rowley, Massachusetts.
- Perdue, C. 1985. Understanding and Misunderstanding in Adult Language Acquisition: Recent Work in the ESF Project. In Lüdi, G. (ed.) 1985: Devenir Bilingue - Parler Bilingue. Niemeyer: Tübingen.
- Rescorla, L. & Okuda, S. 1982. The Initial Stages of Second Language Acquisition: Lexical Development in a Japanese Child Learning English. (Paper presented at the 7th Annual Boston Conference on Language Development, 1982).
- Takala, S. 1984. Evaluation of Students' Knowledge of English Vocabulary in the Finnish Comprehensive School, University of Jyväskylä. Jyväskylä.
- Van Helvert, K. 1985. Nederlands van en tegen Turkse Kinderen. (doctoral dissertation. University of Nijmegen, Holland).
- Voionmaa, K. 1983. On Interpersonal Power and its Relation to Second Language Acquisition. In Karlsson, F. (ed.) 1983: Papers from the 7th Scandinavian Conference of Linguistics. Helsinki.
- Yoshida, M. 1978. The Acquisition of English Vocabulary by a Japanese-speaking Child. In Hatch, E. (ed.) 1978: Second Language